We claim:

1. A communications structure for communicating between at least one network node and at least two subscriber stations through a multiple access link, said structure comprising:

a plurality of dedicated channels, each dedicated channel having allocated to it a portion of the transmission capacity of said link to provide communication between said network node and one of said at least two subscriber stations; and

a shared channel having allocated to it a portion of the transmission capacity of said link and wherein said shared channel is operable to transmit frames of packets from said network node to said at least two subscriber stations.

2. The structure according to claim 1 wherein said portion of the transmission capacity of said link allocated to said shared channel is fixed.

3. The structure according to claim 1 wherein said structure includes a preselected minimum number of said dedicated channels and said portion of the transmission capacity of said link allocated to said shared channel comprises the balance of said transmission capacity which is not occupied by said preselected number of said dedicated channels.

4. The structure according to claim 1 including at least two shared channels, each shared channel being operable to transmit frames of packets from said network node to said at least two subscriber stations.

5. The structure according to claim 4 wherein each of said at least two shared channels is operable to transmit said frames of packets to different ones of said at least two subscriber stations.

6. The structure of claim 4 wherein said balance of said transmission capacity is assigned unequally to each of said at least two shared channels.

7. The structure according to claim 3 wherein additional dedicated channels are created, when needed, by reassigning necessary transmission capacity of said link from at least one shared channels to such additional dedicated channels.

8. The structure according to claim 7 wherein said at least one shared channel has a preselected minimum transmission capacity and reassignment of transmission capacity from said at least one shared channel to said additional dedicated channels ceases before said transmission capacity assigned to said shared channels falls below said minimum transmission capacity.

9. The structure according to claim 1 wherein data for a subscriber station is transmitted from said network node via a combination of a dedicated channel and said shared channel, said dedicated channel providing a first data transmission rate and said shared channel providing an additional transmission rate, as needed, to accommodate transmission bursts in excess of said first data transmission rate.

10. The structure of claim 1 wherein at least one of said plurality of dedicated channels has a different amount of said transmission capacity allocated to it than does another of said plurality of dedicated channels.

11. The structure of claim 1 wherein said link is a radio link.

12. The structure of claim 11 wherein said radio link employs CDMA as a multiple access technique.

13. A method of transmitting data from a network node to a plurality of subscriber stations over a multiple access link, comprising the steps of:

(i) determining the requirements for a first data transmission intended for a subscriber station;

(ii) selecting the use of a dedicated channel or a shared channel to effect said first data transmission in accordance with said determined requirements; and

(iii) if a dedicated channel is selected, obtaining a dedicated channel when available and transmitting said first data transmission thereon and if a shared channel is selected, transmitting said first data transmission on said shared channel in the form of data packets addressed to said subscriber station.

14. The method of claim 13 wherein the determination in step (i) is made in consideration of the QoS requirements of said first data transmission.

15. The method of claim 13 wherein the determination in step (i) is made in consideration of the type of data to be transmitted.

16. The method of claim 13 wherein, if a dedicated channel is selected and no such dedicated channel is available, said first data transmission is transmitted on said shared channel.

17. The method of claim 13 where in step (ii), both a dedicated channel and a shared channel are selected, an amount of said first data transmission corresponding to the transmission capacity of said dedicated channel being sent thereon and the balance of said first data transmission being sent on said shared channel.

18. A system for transmitting data comprising:

a network node having an output device for outputting a signal;

a plurality of subscriber stations each having an input device and being operable to a receive said signal at a different reception-quality than at least one other said subscriber station;

said signal including a frame having an identifier recoverable by all of said subscriber stations regardless of said reception-qualities, and a remaining portion recoverable by at least one of said subscriber stations, said identifier indicating whether said subscriber station need recover said remaining portion.

19. The system according to claim 18 wherein said output device is a radio and said input device is a radio and said signal is a wireless transmission.

20. The system according to claim 18 wherein said signal is transmitted over a CDMA channel.

21. The system according to claim 18 wherein said identifier indicates a range of reception-qualities and said remaining portion includes a header having address information, said header being recoverable by said subscriber stations within said range, said remaining portion further including at least one payload packet being recoverable by a subscriber station corresponding to said address information.

22. The system according to claim 19 wherein said payload packet is packaged according to an addressee subscriber station's reception-quality.

23. The system according to claim 18 wherein said reception-quality is a measurement of signal-to-noise ratio.

24. The system according to claim 18 wherein said identifier is packaged into said frame using a modulation operation.

25. The system according to claim 18 wherein said identifier is packaged into said frame using an encoding operation.

26. The system according to claim 18 wherein said remaining portion is packaged into said frame using a modulation operation.

27. The system according to claim 18 wherein said remaining portion is packaged into said frame using a combination of an encoding operation and a modulation operation.

28. The system according to claim 27 wherein said encoding operation is rate 1/N covolutional encoding and N equals at least two.

29. The system according to claim 28 wherein the result of said encoding operation is punctured.

30. The system according to claim 27 wherein said modulation operation is M-ary QAM.

31. The system according to claim 18 wherein said remaining portion is packaged into said frame using an encoding operation.

32. A system for transmitting data comprising:

a network node;

a first subscriber station and being operable to a receive a transmitted radio signal from said

network node at a first reception-quality;

at least one additional subscriber station operable to receive said transmitted radio signal at a second reception-quality different from said first reception-quality;

said network node operable to robustly-package a frame of data over a channel for reception by all of said subscriber stations, wherein a portion of said frame is recoverable by all of said subscriber stations to indicate whether a receiving subscriber station is intended to recover a remaining portion of said frame.

33. A subscriber station comprising:

means for receiving a radio-signal at a reception-quality, said radio-signal carrying a frame transmitted from a network node;

means to recover an identifier from said frame regardless of said reception-quality, said identifier indicating whether said subscriber station should recover a remaining portion of said frame that is packaged according to said reception-quality.

34. A frame for transmission to a plurality of subscriber stations each having a reception-quality corresponding to an ability to recover said transmission, said frame comprising:

an identifier packaged for recovery regardless of said reception-qualities and including information representing whether a receiving subscriber station is within a range of reception-qualities;

a header packaged for recovery by subscriber stations within said range and including address information; and,

at least one payload packet packaged for recovery by subscriber stations in accordance with said address information.

35. A method of packaging a frame for transmission to at least one of a plurality of subscriber stations over a multiple-access link, each of said subscriber stations having a reception-quality associated with an ability to receive a transmission over said link, said method comprising the steps of:

receiving and buffering a sufficient amount of data to fill said frame;

assembling said data into at least one payload packet addressed to said at least one subscriber station, said at least one payload packet being robustly-packaged according said at least

one subscriber station's reception-quality;

assembling an address of said at least one subscriber station into a header packet that is robustly-packaged at least according said at least one subscriber station's reception-quality;

assembling an identifier indicating the poorest reception-quality of the at least one subscriber stations having said at least one payload packet addressed thereto, said identifier being recoverable by all subscriber stations regardless of said reception-qualities;

assembling said payload packets, said header and said class-identifier into a frame; and

transmitting said frame over said link.

36. A method of recovering a frame transmitted from a network node to a plurality of subscriber stations over a multiple-access link, each of said subscriber stations having a reception-quality associated with said multiple-access link, said method comprising the steps of:

receiving said transmitted frame;

recovering an identifier using a recovery operation corresponding to a lowest reception-quality of said subscriber stations;

recovering a header when said identifier indicates that said receiving subscriber station is within a range of reception-qualities, said header packet recovered using a recovery operation corresponding to a lowest reception-quality indicated by said identifier packet; and

recovering payload packets when said header packets indicate that said payload packets are addressed to said receiving subscriber station, said payload packet recovered using a recovery operation corresponding to a reception-quality of said receiving subscriber station.

37. A frame for transmission to a plurality of subscriber stations each having a reception-quality corresponding to an ability to recover said transmission, said frame comprising:

an identifier packaged for recovery regardless of said reception-qualities and including information representing whether a receiving subscriber station is within a range of reception-qualities;

a header packaged for recovery by subscriber stations within said range and including address information; and

at least one payload packet packaged for recovery by subscriber stations in accordance with said address information.

38. The frame according to claim 37 wherein said identifier is packaged for recovery according to an error rate one order of magnitude lower than a target error rate for said frame.

39. A communications structure for communicating between at least one network node and at least two subscriber stations through a multiple access link, said structure comprising:

a plurality of dedicated channels, each dedicated channel having allocated to it a portion of the transmission capacity of said link to provide communication between said network node and one of said at least two subscriber stations;

a shared channel having allocated to it a portion of the transmission capacity of said link and wherein said shared channel is operable to transmit frames of packets from said network node to said at least two subscriber stations; and

wherein at least one of said dedicated channels or said shared channel employs a modulation and/or encoding method for transmissions to a subscriber station which is selected according to the reception-quality of said subscriber station, said modulation and/or encoding method differing from a modulation and/or encoding method for transmissions to another subscriber station with a different reception-quality.